



# 938-8AD/938-8AE LOUDSPEAKER SYSTEM



## DESCRIPTION

The Altec Lansing 938 multi-purpose loudspeaker systems are both compact and versatile. They were designed to be used as high level stage monitors in portable sound reinforcement and can also be used as a small, full range system in churches or night clubs or for reinforcement installation in any small to medium room.

The 938 may be placed at 90°, 50° or 30° angles (referenced to floor-plane mounting surface). The reversible grille permits a right-side-up orientation regardless of the speaker's position. The 938 uses an upgraded version of the Altec Lansing 604, long recognized for uniform frequency response and high efficiency, with low and high frequency elements mounted coaxially to produce a single point source of sound. New materials have been used in the low and high frequency voice coils

which allow the 938 to handle large power amplifier outputs. The dividing network is designed with 12 dB per octave slopes for a smooth and gradual transition at crossover and has adjustable attenuation at high frequencies.

The enclosure is constructed of 3/4" birch plywood and is finished in a black texture surface polyurethane paint with a black grille. The 938 also features recessed carrying handles and durable metal corner guards to protect the cabinet during handling and set-up. In addition, convenient tee nut mounting points are provided to aid in hanging the system in a permanent installation.

When used as a monitor or a small main system, the 938 will supply the high level quality sound that is required for churches, hotels and other installations.

## SPECIFICATIONS

<b>System Type:</b>	Two way, vented, full range loudspeaker system
<b>Pressure Sensitivity:</b>	100 dB SPL (1W, 1M, 80 Hz-15 kHz, re: 20 $\mu$ Pa, see Note 2)
<b>Frequency Response:</b>	80 Hz-15 kHz (see Figure 1, Note 3)
<b>Power Handling:</b>	150 watts, 80 Hz-15 kHz, AES method (see Note 4)
	300 watts, 80 Hz - 15 kHz continuous program material (see Note 12)
	600 watts peak power, 80 Hz-15 kHz (see Note 13)
<b>Maximum Long Term Output:</b>	122 dB SPL (1M, re: 20 $\mu$ Pa, see Note 5)
<b>Impedance:</b>	7.2 $\Omega$ minimum, maximum inductive phase angle = 68° at 8 Hz, maximum capacitive phase angle = 59° at 20 Hz (see Figures 3 and 4, Note 11)
<b>Distribution Pattern:</b>	60° horizontally by 40° vertically (see Figure 8)
<b>Components:</b>	16" coaxial loudspeaker, part number 50-03-026768
<b>Crossover Network:</b>	<b>938-BAD</b> part number 56-06-027683, <b>938-BAE</b> part number 56-06-027506 Crossover frequency 2 kHz with choice of

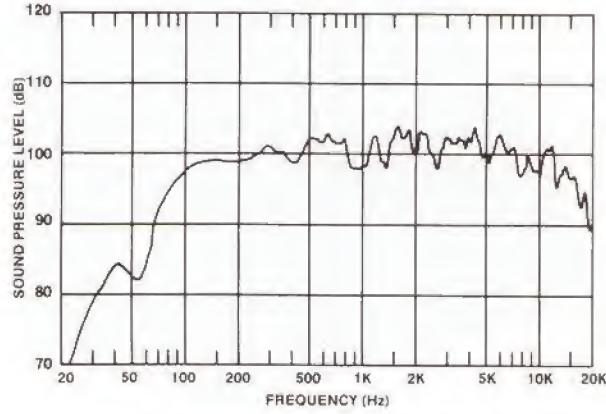


Figure 1. Frequency Response (See Notes 1 and 3)

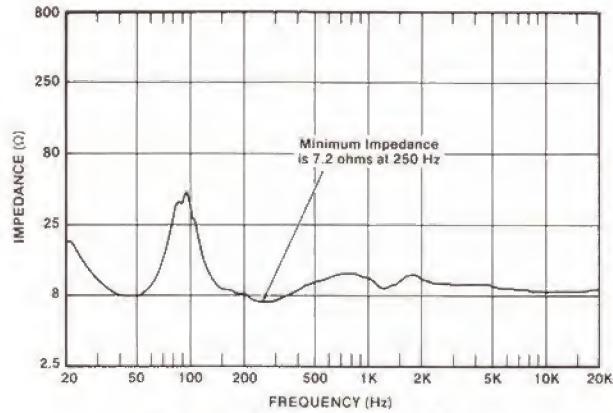


Figure 3. Magnitude of Impedance

<b>Enclosure:</b>	high frequency attenuation.
	Vented type for optimum response, built of 3/4 inch (1.9 cm) birch plywood lined with glass wool, includes tee nut mounting points on each side and a removable grille.
<b>Input Connector:</b>	<b>938-BAD</b> ; red and black five way binding posts and two 1/4" phone jacks wired in parallel.
	<b>938-BAE</b> ; red and black five way binding posts and XLR connectors wired in parallel (Pin 2 is positive and Pin 3 is negative).
<b>Replacement H.F. Diaphragm:</b>	Model 26420
<b>L.F. Recone Kit:</b>	R604-8L
<b>Replacement Grille:</b>	Model RG 938
<b>Dimensions:</b>	20.5" (52.1 cm) high 22" (55.8 cm) wide 21.5" (54.6 cm) deep
<b>Net Weight:</b>	58 lbs. (26.4 kg)
<b>Shipping Weight:</b>	60 lbs. (27.3 kg)
<b>Finish:</b>	Black, texture finish, polyurethane paint, black grille cloth

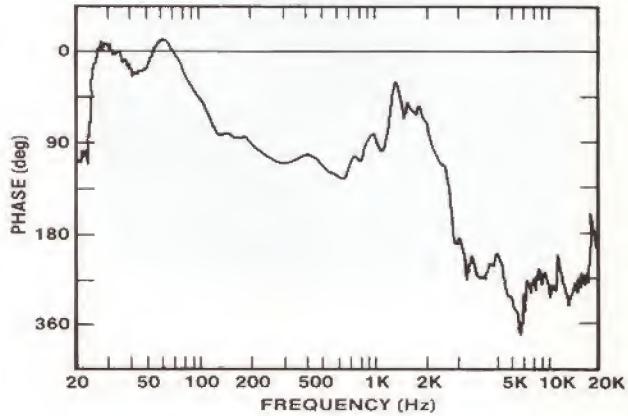


Figure 2. Phase Response (See Note 6)

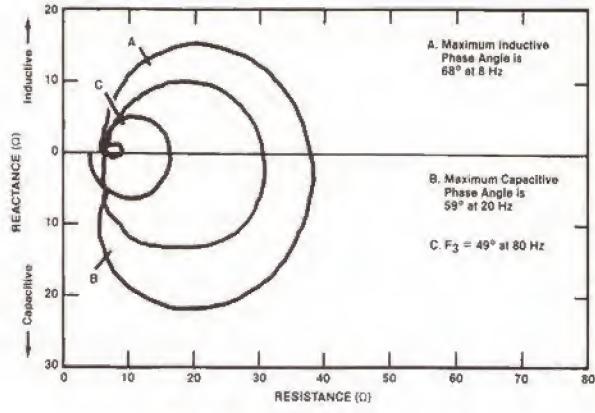


Figure 4. Complex Impedance

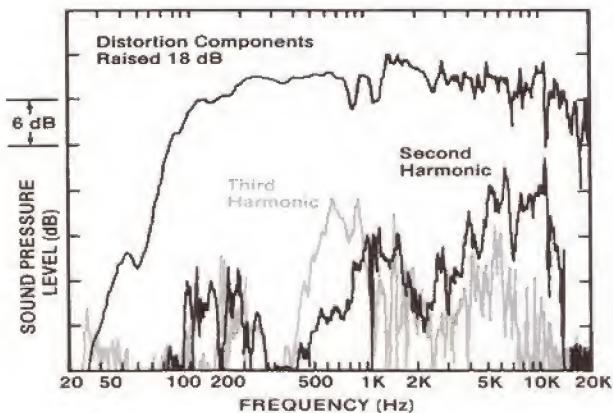


Figure 5. Harmonic Distortion at .01 Rated Power (1.5 watts, See Note 7)

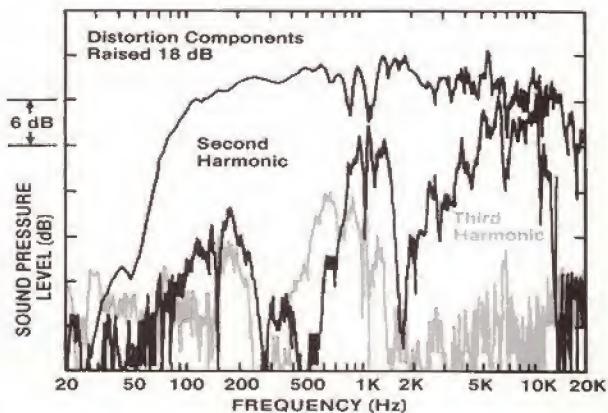
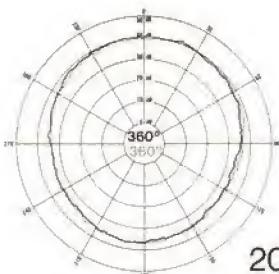
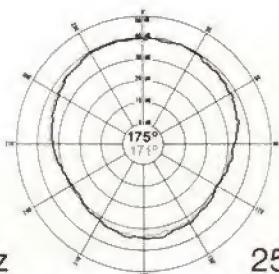


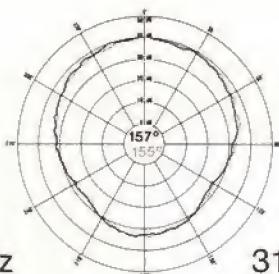
Figure 6. Harmonic Distortion at 0.1 Rated Power (15 watts, See Note 7)



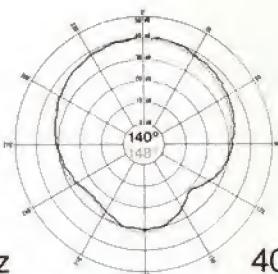
200 Hz



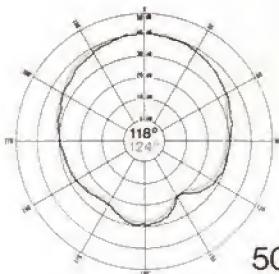
250 Hz



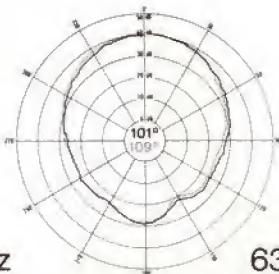
315 Hz



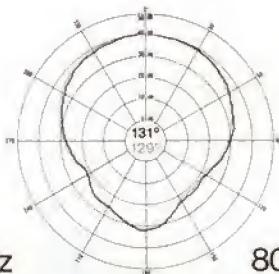
400 Hz



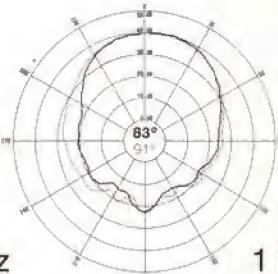
500 Hz



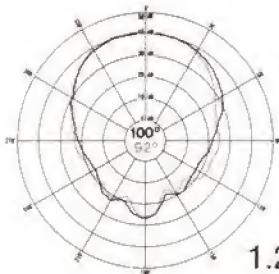
630 Hz



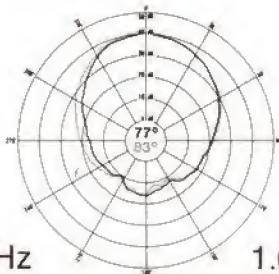
800 Hz



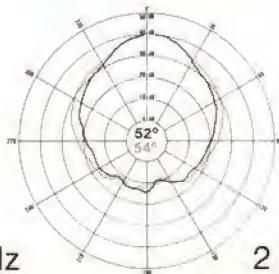
1 kHz



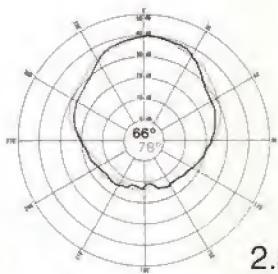
1.25 kHz



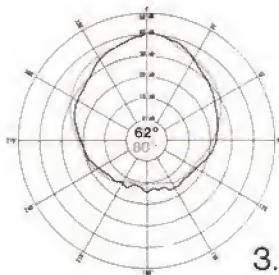
1.6 kHz



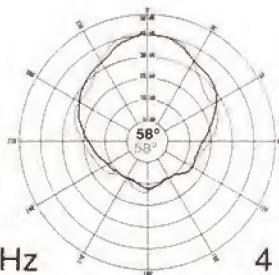
2 kHz



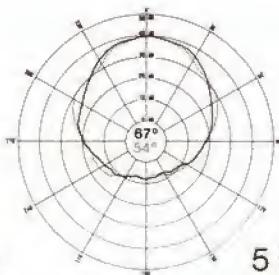
2.5 kHz



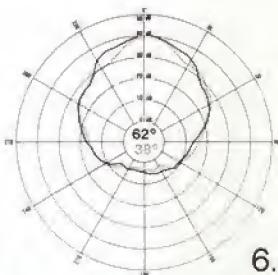
3.15 kHz



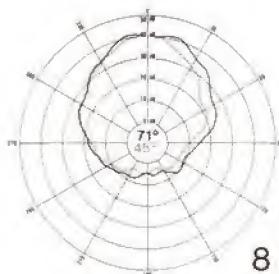
4 kHz



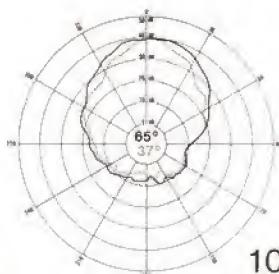
5 kHz



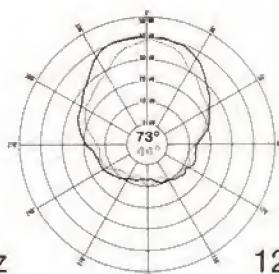
6.3 kHz



8 kHz

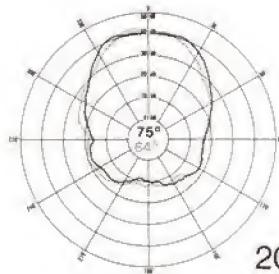


10 kHz



12.5 kHz

16 kHz



20 kHz

Figure 7. One-third Octave Polar Response Charts  
(See Note 8)

HORIZONTAL  
VERTICAL

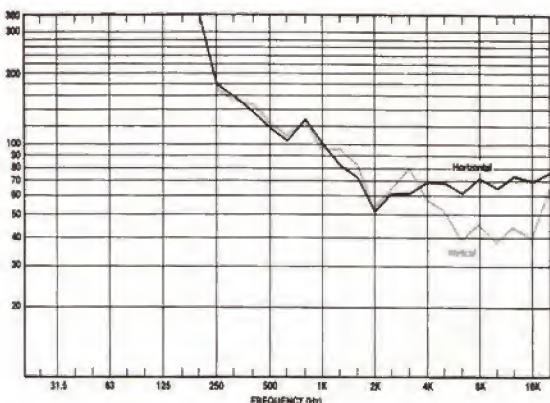


Figure 8. Coverage Angle

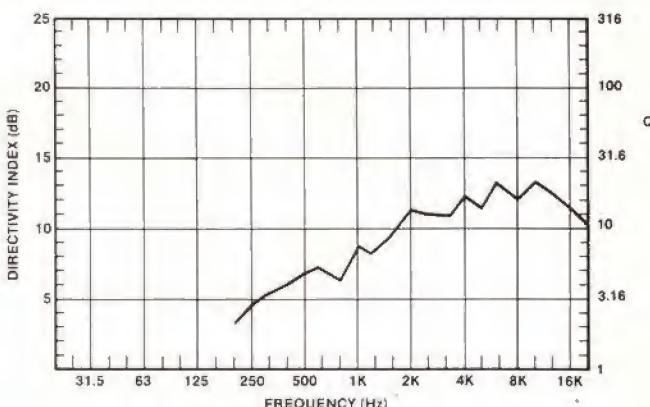
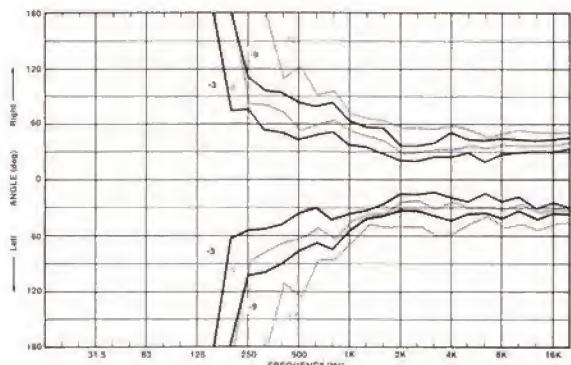


Figure 9. Q and DI



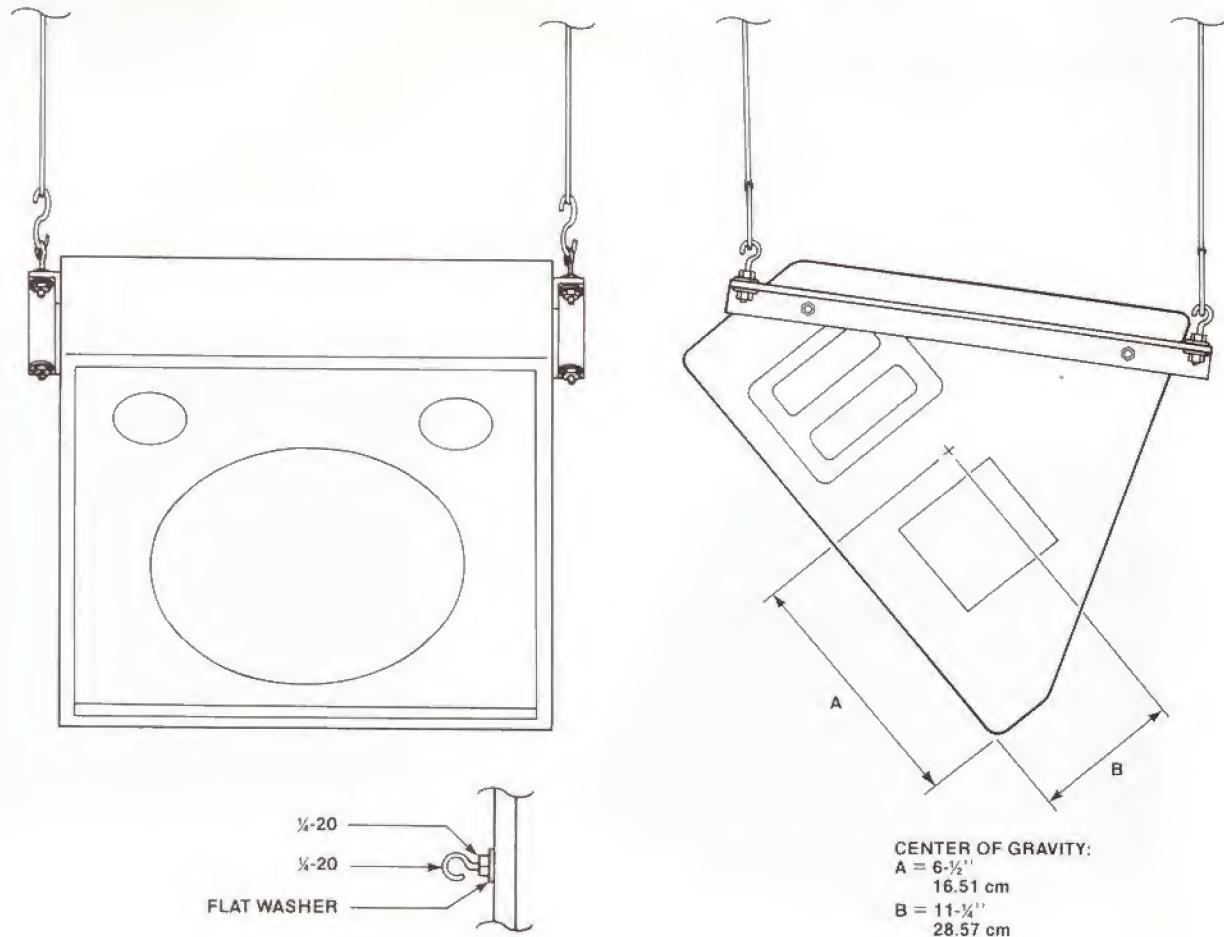


Figure 14. Mounting Data

#### MOUNTING INFORMATION FOR FIXED INSTALLATION

The loudspeaker system is supplied with 1/4-20 threaded inserts which allow suspension mounting in either 50° or 30° angles (referenced to

a ceiling-plane mounting surface). The user must supply eyebolts, hexnuts, washers, "S" hooks, and cables or chains.

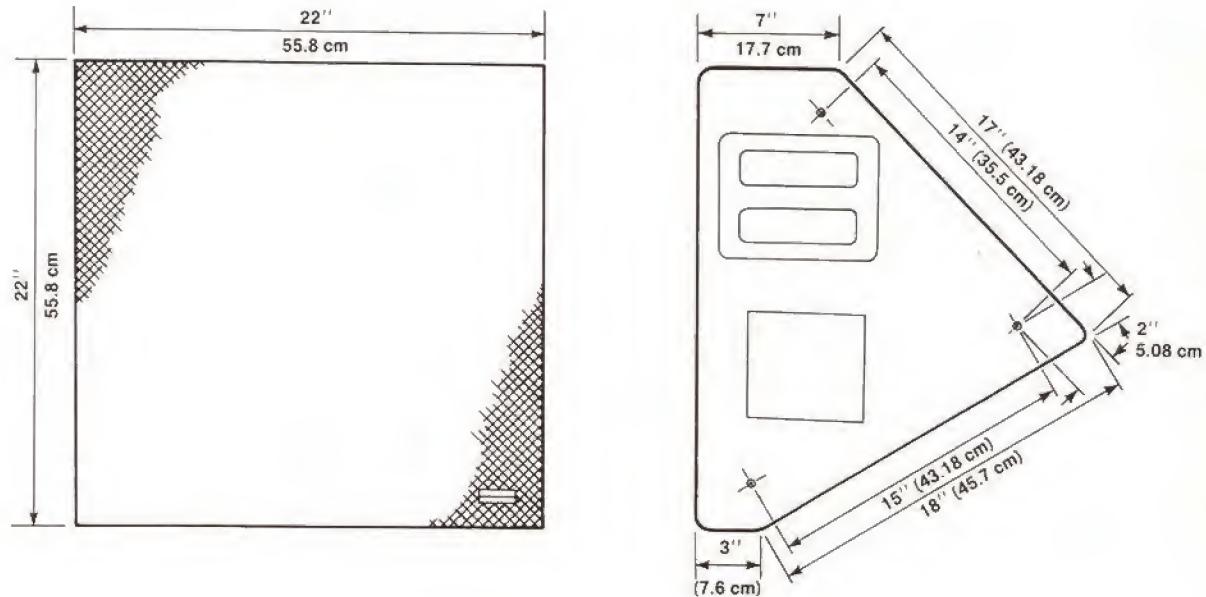


Figure 15. System Dimensions

#### ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

The loudspeaker shall be of the two-way multi-purpose type, consisting of a 16" coaxial type loudspeaker and a dividing network having a crossover frequency of 2 kHz with variable high-frequency attenuation. The loudspeaker system shall meet the following performance criteria. Power rating, 150 w (average) of continuous pink noise, band-limited from 80 Hz-15 kHz. Frequency response, smooth and uniformly usable at high levels from 80 Hz-15 kHz. Pressure sensitivity, 100 dB SPL at one watt, 80 Hz - 15 kHz, measured

from one meter on axis. Impedance, 7.2 ohms, minimum. The enclosure shall be of the ported bass reflex type constructed of  $\frac{3}{4}$ " (1.9 cm) birch plywood damped with sound absorbent glass wool. The finish shall be black spatter-finish polyurethane paint. The dimensions shall be  $20\frac{1}{2}$ " (52.1 cm) high by 22" (55.8 cm) wide by  $21\frac{1}{2}$ " (54.6 cm) deep. The loudspeaker shall weigh 58 lbs. (26.4 kg). The loudspeaker system shall be the Altec Lansing Model **938-8AD** or Model **938-8AE**.



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